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INTRODUCTION.

This REVIEW contains a general summary of the meteorological conditions which prevailed over the United States during February, 1884, based upon the reports from the regular and voluntary observers of the Signal Service, and from co-operating state weather services. Descriptions of the storms which occurred over the north Atlantic ocean during the month are also given, and their approximate paths shown on chart ii.

The most important features of the month were the destructive flood in the Ohio river and the violent tornadoes of the 19th in the Southern states.

The flood in the Ohio river reached a height greater than was ever before known, causing the inundation of the cities and towns along its banks. Very great destruction of property resulted and many thousands of the population were rendered destitute. At Cincinnati, Ohio, the water rose to a height exceeding the great floods of former years, as follows: February, 1832, six feet and ten inches; December, 1847, seven feet and six inches; February, 1883, four feet and nine inches.

On the afternoon and evening of the 19th violent and destructive tornadoes occurred in the Southern states, east of the Mississippi river, during the passage of the storm described under "areas of low barometer" as number ix., and while it was central in the upper lake region. They were most destructive in Alabama and Georgia, where great loss of life and destruction to property occurred.

The monthly precipitation exceeded the average over nearly the whole country, the excess being greatest from Tennessee northeastward to New England, and in southern California. Deficiencies occurred in the west Gulf states, southern slope, Rio Grande valley, and north Pacific coast region, the departure in the last-named district exceeding 4.00 inches.

The month was from 2° to 12° colder than the average February over the northern districts from the upper lake region and upper Mississippi valley westward to the Pacific coast, the greatest departures occurring in the extreme northwest and Missouri valley. Over the southern districts, lower lake region, Ohio valley, and on the Atlantic coast, the month was warmer than the average by from 1° to 5°, the most marked departure being shown in the south Atlantic states.

In the preparation of this REVIEW the following data, received up to March 20th, 1884, have been used, viz.: the regular tri-daily weather-charts, containing data of simultaneous observations taken at one hundred and twenty-two Signal Service stations and fifteen Canadian stations, as telegraphed to this office; one hundred and sixty monthly journals, and one hundred and forty-six monthly means from the former, and fifteen monthly means from the latter; two hundred and seventy-seven monthly registers from voluntary observers; forty-nine monthly registers from United States Army post surgeons; marine records; international simultaneous observations; marine reports, through the co-operation of the "New York Herald Weather Service;" abstracts of ships' logs, furnished by the publishers of "The New York Maritime Register;" monthly weather reports from the local weather services of Indiana, Iowa, Kansas, Nebraska, Ohio, and Tennessee, and of the Central Pacific railway company; trustworthy newspaper extracts; and special reports.

ATMOSPHERIC PRESSURE.

[*Expressed in inches and hundredths.*]

The distribution of mean atmospheric pressure for February, 1884, determined from the tri-daily telegraphic observations of the Signal Service, is shown by the isobarometric lines on chart iii. From this chart it will be seen that the region of greatest atmospheric pressure for the month comprises parts of Montana, Dakota, and Minnesota, where the monthly barometric means exceeded 30.2—the maximum, 30.24, occurring at Fort Buford, Dakota, and at Forts Assinaboine and Benton, Montana. Westward from the region of greatest pressure the monthly barometric means decrease to 30.0 and below, at stations on the northern and middle Pacific coasts; to the southward, to 30.01 in Arizona; to the eastward, to from 30.01 to 30.05, over an area extending from eastern Illinois to New England; southeastward, to 30.07 in central Arkansas and western Tennessee, and thence increasing over the south Atlantic and eastern Gulf states—a small area in northern Georgia being inclosed by an isobar of 30.15. The least monthly mean pressure, 29.97, is reported from Cape Mendocino, California.

The mean pressure of February, 1884, compared with that of the preceding month, shows a slight increase over the Canadian maritime provinces. In all other districts a decrease has taken place, excepting the northern part of the upper lake region and northern New England where no change occurred. The largest deficiences are shown over the region from the upper Mississippi and lower Ohio valleys southwestward to Texas, where they varied from .15 to .21. On the Pacific coast the deficiences varied from .09 to .12; in the extreme northwest, lower lake region, middle and south Atlantic states, from .01 to .09.

DEPARTURES FROM THE NORMAL VALUES FOR THE MONTH.

In the extreme northwest and at the more northerly stations in the upper lake region, the mean pressure of February, 1884, was above the normal, the departures ranging from .01 to .07. In all other parts of the country, except in New England where it was normal, the mean pressure was below the normal for February. The greatest deficiences occurred on the Pacific coast from southern California to southern Oregon, and from central Ohio valley and Tennessee to the Atlantic coast. In those districts the departures varied from .10 to .13. In southern New England, the lower lake region, Indiana, Illinois, Missouri, and from the south Atlantic coast westward to New Mexico, the departures below the normal varied from .04 to .10; in the remaining districts the deficiences were less marked.